REMARKS

Claims 7 – 19 are pending in this application.

In a Non-Final Office Action mailed January 24, 2007, Applicants' claim for domestic priority has been stated as failing to provide adequate support under 35 USC 112 for claims 11, 13, and 18 of the subject application, and the specification has been objected to as failing to provide proper antecedent basis for the claimed subject matter. Pursuant to MPEP 608.01(o), second paragraph, the specification has been amended to include appropriate antecedent basis. No new matter has been added.

Claims 11 and 18 have been rejected under 35 USC 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention because the claims do not specify which subgroups of Groups III and IV are intended to be encompassed by the claims to Groups III and IV of the Periodic Table. This rejection is respectfully traversed. The term "Groups III and IV", if not further specified, means any element of Groups III and IV to one skilled in the art. This has been known for more than one hundred years, so it is not indefinite. Further, the Office Action maintains that the Applicants must indicate what Periodic Table is being used, namely the CAS Periodic Table or the IUPAC periodic table. This is not understood. When someone skilled in the art refers to the Periodic Table, a table such as Exhibit 1 attached hereto is understood. This table was found on the Internet simply by Googleing the term "Periodic Table", so clearly it is what is understood as the Periodic Table in the art. What the Office Action refers to as the CAS Periodic Table appears simply to be a method of numbering chemicals so that they can be easily bought, that includes elements because these are chemical, and thousands of other chemicals, but does not change the concept of Periodic Table. What the Office Action refers to as the IUPAC periodic table is simply a convention for naming the heavy transuranic elements and does not appear to be applicable to the present issue.

Claim 13 has been rejected under 35 USC 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention because it was not understood how the process could be practiced if one of the claimed components could not be

drawn into a fiber. This rejection is respectfully traversed. Claim 13 claims that the viscous intermediate mixture is drawn into a fiber. This can be done even though the primary precursor cannot be drawn into a fiber because the mixture of the primary precursor and the secondary precursor can be drawn into a fiber.

Claims 7 – 13 have been rejected under 35 USC 112, first paragraph, because the specification does not reasonably provide enablement for producing a composite fiber of nanoscale oxide particles dispersed in a non-oxide compound matrix by mixing precursors for the oxide and non-oxide ceramics, heat treating the mixture to form a viscous composition, drawing the viscous composition into a fiber, thermosetting the drawn fiber into a rigid state, and pyrolyzing the resulting fiber. This rejection is respectfully traversed. Once one specifies particular precursors for a dramatic invention such as that disclosed, those skilled in the art will know how to use other precursors. The precursor art is well-documented, and if the USPTO would like to have such documentation showing a wide variety of standard precursors that can be substituted for organosilicon precursors and alkoxides, this will be provided.

Claims 7, 9, 11, 12, 14 – 16, 18, and 19 have been rejected under 35 USC 102(b) as being anticipated by Yajima et al. (US Patent No. 4,663,229, hereinafter "Yajima"). This rejection is respectfully traversed. Yajima teaches making an amorphous material comprising silicon, zirconium, and carbon by mixing various polymers containing these materials. It does not teach mixing a secondary precursor being an oxide ceramic. Thus, claim 7 is patentable. Neither does Yajima disclose a nanocomposite ceramic in which a nanophase oxide ceramic is distributed within the non-oxide ceramic. Rather it discloses an amorphous solution of ultrafine crystalline particles of various silicon-carbon and zirconium-carbon materials. See the Abstract. Thus, claim 14 is patentable. Claims 9, 11, and 12 depend on claim 7 and claims 13 – 16, 18, and 19 depend on claim 14; thus, these claims are also patentable. See *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4. If this rejection is maintained, it would be appreciated if the precise columns and line numbers in Yajima where the particular limitations of the claims are disclosed are specified.

Claims 14, 18, and 19 have been rejected under 35 USC 102(a) as being anticipated by PCT Application No. WO 01/038616, as well as Kumagawa et al. (US Patent No. 6,583,650 B1, which is the

national phase of WO 01/038616, hereinafter "Kumagawa"). Claim 14 has been amended to overcome this rejection. The non-oxide ceramic of Kumagawa does not contain nitrogen, so claim 14 is not anticipated. Claims 18 and 19 depend on claim 14 and, therefore, are also patentable. See *In re Fine*, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) at headnote 4.

Claim 8 has been rejected under 35 USC 103(a) as being unpatentable over Yajima. This rejection is respectfully traversed. Claim 8 depends on claim 7, which, as indicated above, is patentable. Therefore, it is also patentable under *In re Fine*. Moreover, there does not appear to be a thermosetting step in Yajima after a mixing step, but rather there is an oxidizing step. See column 8, lines 21 – 33.

Claims 14 and 17 – 19 have been rejected under 35 USC 103(a) as being unpatentable over Narula et al. (US Patent No. 5,350,719 A, hereinafter "Narula"). This rejection is respectfully traversed. First of all, Narula does not disclose either carbon or silicon in the refractory material, and no reference is presented that shows this. Thus, for this reason alone claim 14 is patentable. Specific limitations distinguishing over the references should not be ignored. *In re Glass*, 176 USPQ 489, 491 (CCPA 1973). Further, in Narula the material produced is a titanium nitride containing refractory material containing titanium nitride crystals. See the Abstract. This does not suggest claim 14, which claims a non-oxide ceramic with a nanophase distribution of an oxide ceramic. Thus, claim 14 is patentable. Claims 18 and 19 depend on claim 14 and are patentable at least for that reason.

In view of the above amendments and remarks, Applicants believe the pending application is in condition for allowance. Applicants believe no fee is due with this response. However, if a fee is due, please charge our Deposit Account No. 50-1848, under Order No. 013743.0104PTUS from which the undersigned is authorized to draw.

Respectfully submitted,
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ChemiCool

Periodic Table

	Group I	II										III	IV	V	VI	VII	VIII
1	1 H																2 He
2	3 Li	4 Be										5 B	6 C	7 N	8 O	9 F	10 Ne
3	11 Na	12 Mg										13 Al	14 Si	15 P	16 S	17 Cl	18 Ar
4	19 K	20 Ca	21 Sc	22 Ti	23 V	24 Cr	25 Mn	26 Fe	27 Co	28 Ni	29 Cu	30 Zn	31 Ga	32 Ge	33 As	34 Se	35 Br	36 Kr
5	37 Rb	38 Sr	39 Y	40 Zr	41 Nb	42 Mo	43 Tc	44 Ru	45 Rh	46 Pd	47 Ag	48 Cd	49 In	50 Sn	51 Sb	52 Te	53 I	54 Xe
6	55 Cs	56 Ba	57 La	72 Hf	73 Ta	74 W	75 Re	76 Os	77 Ir	78 Pt	79 Au	80 Hg	81 Tl	82 Pb	83 Bi	84 Po	85 At	86 Rn
7	87 Fr	88 Ra	89 Ac	104 Rf	105 Db	106 Sg	107 Bh	108 Hs	109 Mt	110 Ds								

58 Ce	59 Pr	60 Nd	61 Pm	62 Sm	63 Eu	64 Gd	65 Tb	66 Dy	67 Ho	68 Er	69 Tm	70 Yb	71 Lu
90 Th	91 Pa	92 U	93 Np	94 Pu	95 Am	96 Cm	97 Bk	98 Cf	99 Es	100 Fm	101 Md	102 No	103 Lr

Legend

Li Solid | Cs Liquid | H Gas | Tc Synthetic

Alkali metals | Alkali earth metals | Transition metals | Rare earth metals

Other metals | Noble gases | Halogens | Other nonmetals

Periodic Table first discovered in 1869 by Dmitry I. Mendeleyev is a way of presenting all the elements so as to show their similarities and differences. The elements are arranged in increasing order of **atomic number(Z)** as you go from left to right accross the table. The horizontal rows a called **periods** and the vertical rows, **groups.**
A **noble gas** is found at the right hand side of each period. There is a progression from metals to non-metals across each period. Elements found in groups (e.g. alkali, halogens) have a similar electronic configuration. The number of electrons in outer shell is the same as the number of the group (e.g. lithium 2-1).
The block of elements between groups II and III are called **transition metals.** These are similar in many ways; they produce colored compounds, have variable valency and are often used as **catalysts.** Elements 58 to 71 are known as **lanthanide** or rare earth elements. These elements are found on earth in only very small amounts.
Elements 90 to 103 are known as the actinide elements. They include most of the will known elements which are found in **nuclear reactions.** The elements with larger atomic numbers than 92 do not occur naturally. They have all been produced artificially by bombarding other elements with particles.

Exhibit 1